CONDENSED

Heathkit® Manual

for the

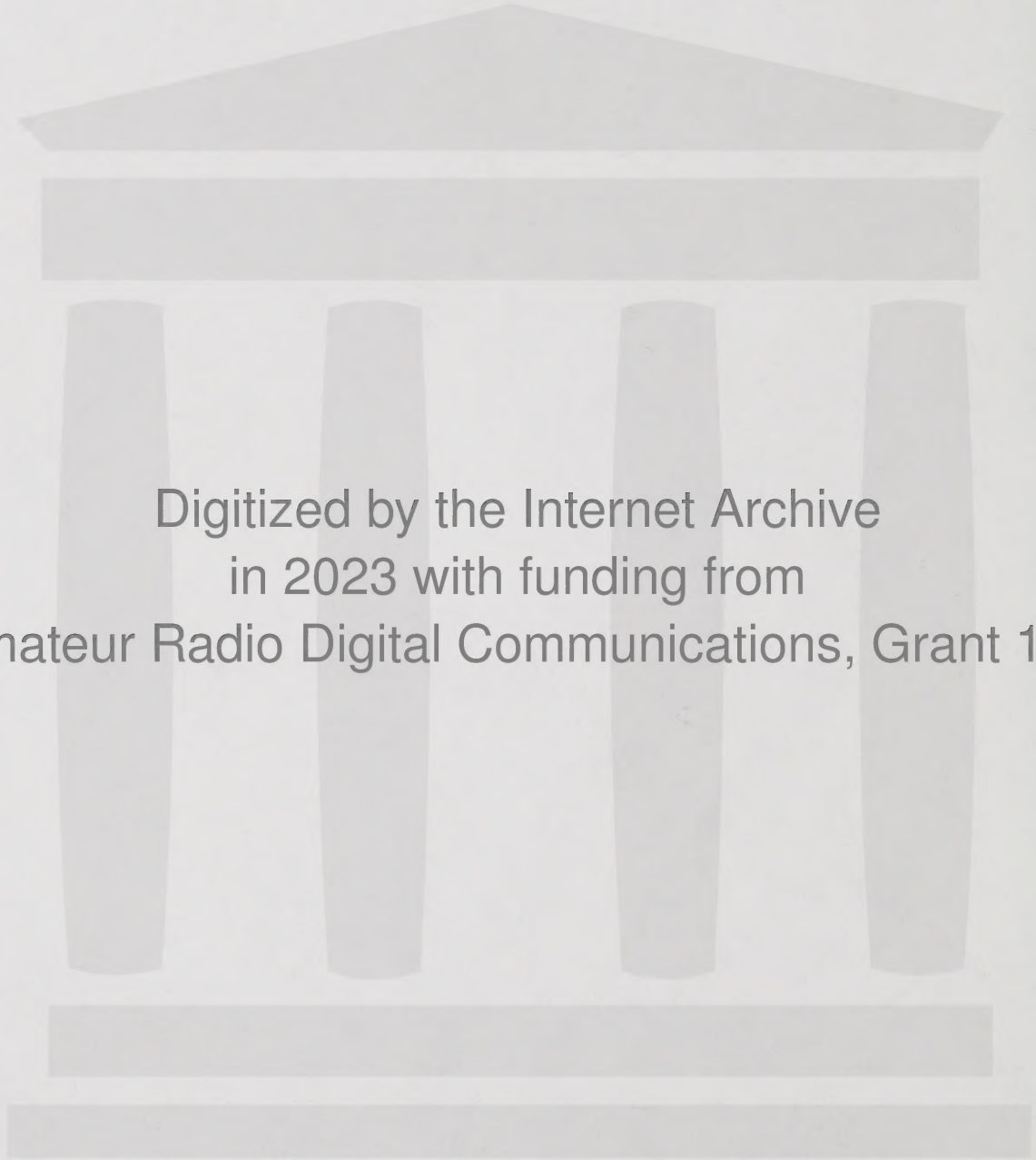
REMOTE COAX SWITCH

Model SA-1480

595-2279

WARNING: TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THE CONTROL CHASSIS TO RAIN OR MOISTURE.

HEATH COMPANY
BENTON HARBOR, MICHIGAN 49022



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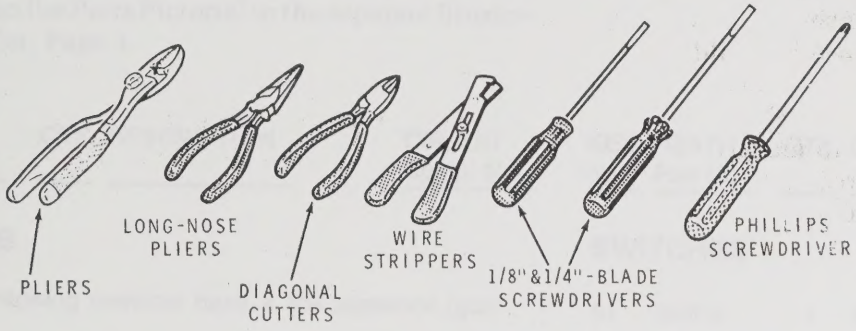
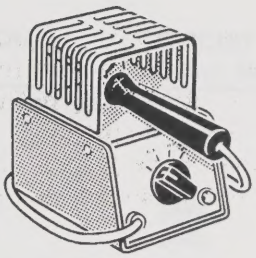
ASSEMBLY NOTES

TOOLS

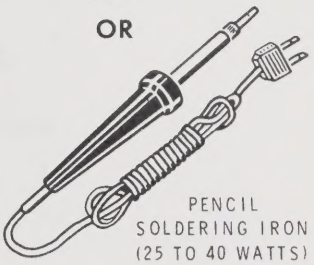
You will need these tools to assemble your kit.





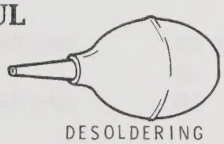
HEATHKIT SOLDERING IRON

OR



PENCIL SOLDERING IRON (25 TO 40 WATTS)

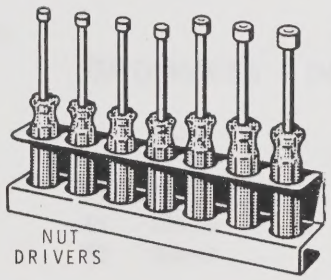
OTHER HELPFUL TOOLS



DESOLDERING BULB*

NUT STARTER (MAY BE SUPPLIED WITH KIT)

DESOLDERING BRAID*



NUT DRIVERS

*TO REMOVE SOLDER FROM CIRCUIT CONNECTIONS.

ASSEMBLY

1. Follow the instructions carefully. Read the entire step before you perform each operation.

2. The illustrations in the Manual are called Pictorials and Details. Pictorials show the overall operation for a group of assembly steps; Details generally illustrate a single step. When you are directed to refer to a certain Pictorial "for the following steps," continue using that Pictorial until you are referred to another Pictorial for another group of steps.

3. Most kits use a separate "Illustration Booklet" that contains illustrations (Pictorials, Details, etc.) that are too large for the Assembly Manual. Keep the "Illustration Booklet" with the Assembly Manual. The illustrations in it are arranged in Pictorial number sequence.

4. Position all parts as shown in the Pictorials.

5. Solder a part or a group of parts only when you are instructed to do so.

PARTS LIST

Check each part against the following list. Any part that is packed in an individual envelope with the part number on it should be placed back in the envelope after you identify it until it is called for in a step. Do not discard any packing materials until all parts are accounted for. The key numbers correspond to the numbers on the Parts Pictorial in the separate Illustration Booklet, Page 1.

To order a replacement part, use the Parts Order Form furnished with this kit. If a Parts Order form is not available, refer to "Customer Service" inside the rear cover of this Manual. For prices, refer to the separate "Heath Parts Price List."

KEY No.	HEATH Part No.	QTY.	DESCRIPTION	CIRCUIT Comp. No.
RESISTORS				
NOTE: The following resistors have a 5% tolerance (gold fourth band).				
A1	6-225	1	2.2 MΩ, 1/2-watt (red red-green)	R1
A2	6-222-1	6	2200 Ω, 1-watt (red-red-red)	R3 through R8
A2	6-272-1	1	2700 Ω, 1-watt (red-violet-red)	R2
CAPACITORS				
B1	25-878	1	2200 μF electrolytic	C1
B2	27-117	1	.27 μF Mylar	C2
DIODES-LED's				
C1	57-27	5	1N2071 diode	D1, D2, D3, D4, D11
C2	412-611	1	LED lamp (red)	D10
C2	412-628	5	LED lamp (green)	D5 through D9
TERMINAL STRIPS				
D1	431-7	2	6-lug screw type	
D2	431-49	1	11-lug	
D3	431-81	1	6-lug	

KEY No.	HEATH Part No.	QTY.	DESCRIPTION	CIRCUIT Comp. No.
SWITCHES				
E1	60-619	1	Rocker switch	SW1
E2	63-1352	1	Rotary switch	SW2
E3	63-1353	1	Rotary switch section	SW4
E4	420-605	1	Motor switch assembly	SW3
GROMMETS – INSULATORS				
F1	73-43	1	3/8" plastic grommet	
F2	75-24	1	Strain relief	
F3	75-738	1	Insulator paper	
F4	260-89	6	LED grommet	
F5	260-90	6	Retainer ring	
HARDWARE				
Hardware packets are marked to show the size of the hardware they contain (HDW #4, or, HDW #2 & #6, etc.). You may have to open more than one packet to locate all the hardware of any one size. (#6, for example).				
#2 Hardware				
G1	250-1295	2	2-56 × 1-1/4" flat-head screw	
G2	252-98	2	2-56 nut	
G3	254-26	2	#2 lockwasher	

KEY No.	HEATH Part No.	QTY.	DESCRIPTION	CIRCUIT Comp. No.
#4 Hardware				
H1	250-273	9	4-40 × 3/8″ screw	
H2	250-428	2	4-40 × 1/4″ flat-head screw	
H3	252-99	11	4-40 nut	
H4	254-34	14	#4 lockwasher	
#6 Hardware				
J1	250-155	10	#6 × 3/8″ black sheet metal screw	
J2	250-237	8	#6 × 3/8″ sheet metal screw	
J3	250-535	1	#6 × 1/4″ housing screw	
J4	250-1297	4	6-32 × 1-3/4″ screw	
J5	252-66	1	6-32 wing nut	
J6	252-77	13	6-32 nut	
J7	255-11	1	6-32 × 1″ spacer	
J8	255-146	2	6-32 × 3/8″ plastic spacer	
J9	255-702	2	6-32 × 2-1/2″ spacer	
J10	259-1	2	#6 locking solder lug	
J11	259-6	1	#6 flat solder lug	
J12	250-26	2	6-32 × 5/8″ screw	
J13	250-233	8	6-32 × 3/8″ screw	
J14	253-89	1	#6 D washer	
J15	253-96	7	#6 flat washer	
J16	254-6	1	#6 external tooth lockwasher	
J17	254-25	21	#6 lockwasher	
#8 Hardware				
K1	250-137	2	8-32 × 3/8″ screw	
K2	252-4	2	8-32 nut	
K3	259-15	7	#8 spade lug	
K4	254-2	2	#8 lockwasher	

KEY No.	HEATH Part No.	QTY.	DESCRIPTION	CIRCUIT Comp. No.
Other Hardware				
L1	252-7	1	Control nut	
L2	252-57	2	Large nut	
L3	253-10	1	Control flat washer	
L4	253-73	1	Rubber washer	
L5	253-103	2	#3 fiber washer	
L6	253-112	1	Felt washer	
L7	254-5	1	Control lockwasher	
L8	142-711	1	Set of parts consisting of:	
L9	*142-713*	*1*	*U-bolt*	
L10	*142-714*	*2*	*U-bolt nut*	
L11	*142-715*	*1*	*U-bolt outer plate*	
L12	*142-716*	*1*	*U-bolt inner plate*	
L13		2	*Plastic end caps (not used)*	
L14	255-172	3	1-3/8″ spacer	
WIRE-SLEEVING				
	89-49	1	Line Cord	
	340-9	12″	Bare wire	
	344-59	24″	White wire	
	346-21	3″	Small sleeving	
	346-26	7″	Large sleeving	
	347-55	18″	Flat cable	
MISCELLANEOUS				
M1	54-915	1	Power transformer	T1
M2	90-1252-1	1	Control cover	
M3	200-1356-1	1	Control chassis	
M4	204-2426	1	Remote chassis	
M5	204-2427	4	Bracket	
M6	205-1787	1	Plate	
M7	207-4	1	Cable clamp	
M8	214-224-1	1	Remote housing	
M9	261-43	4	Foot	
M10	352-33	2	Locking compound*	
	469-1	1	Sandpaper	

*WARNING: This locking compound contains 1,1,1 TRICHLOROETHANE. If swallowed, induce vomiting and call a physician. Avoid contact with skin and eyes, use with adequate ventilation. In case of eye contact, flush thoroughly with water.

HEATHKIT®

KEY No.	HEATH Part No.	QTY.	DESCRIPTION	CIRCUIT Comp. No.

Miscellaneous (cont'd)

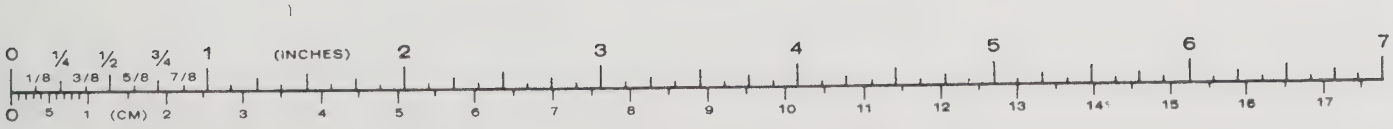
M11	390-1023	1	Label set	
M12	390-1255	1	Fuse replacement label	
M13	390-1551	1	Control label	
M14	391-34	1	Blue and white label	
M15	421-31	1	3/16-ampere slow-blow fuse	F1
M16	422-1	1	Fuse block	
M17	432-199	1	Wire nut	
M18	436-51	6	Coaxial jack with hardware	JC, J1 through J5
M19	440-23	4	Protective cap	
M20	455-50	1	Knob insert	
M21	462-962	1	Knob	
M22	490-5	1	Nut Starter	
M23	350-11	1	Sealant	
	597-260	1	Parts Order Form	
			Solder	
		1	Assembly Manual (see Page 1 for Part Number).	

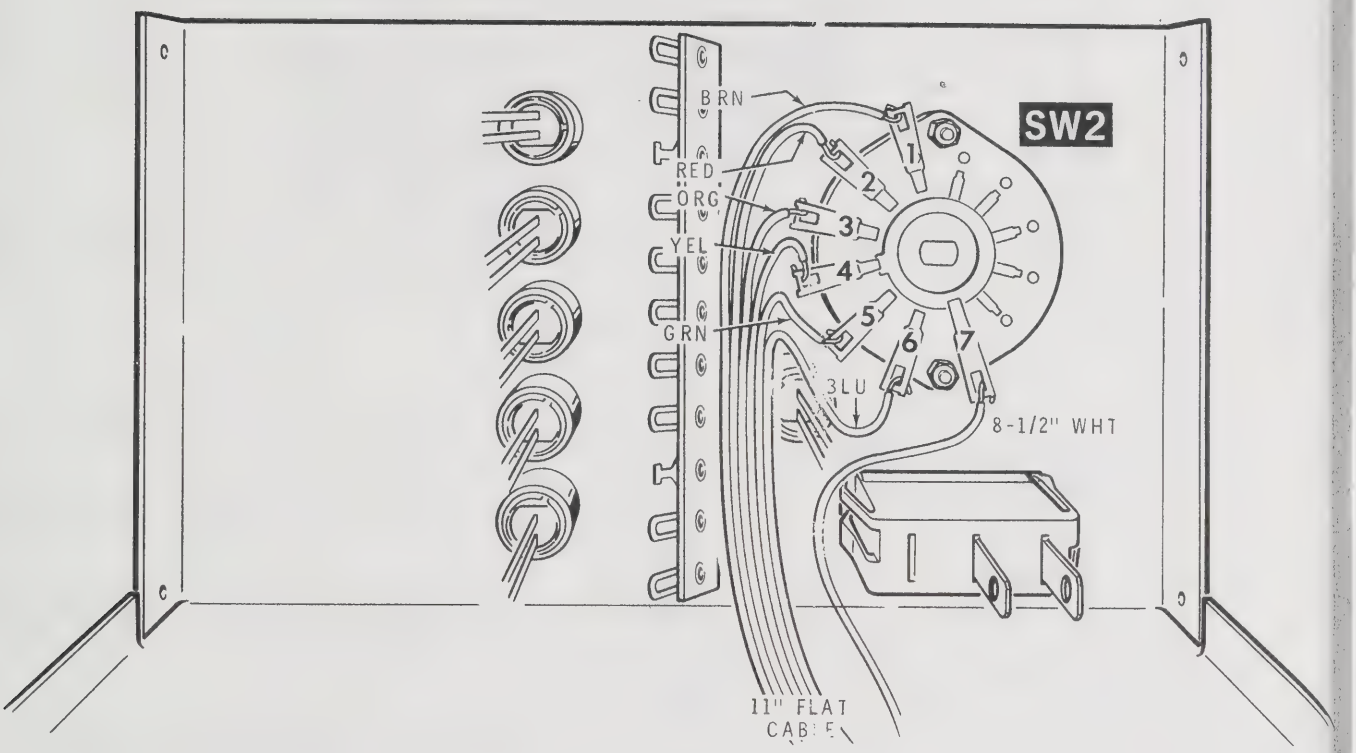
ADDITIONAL PARTS TO BE PURCHASED

Cable

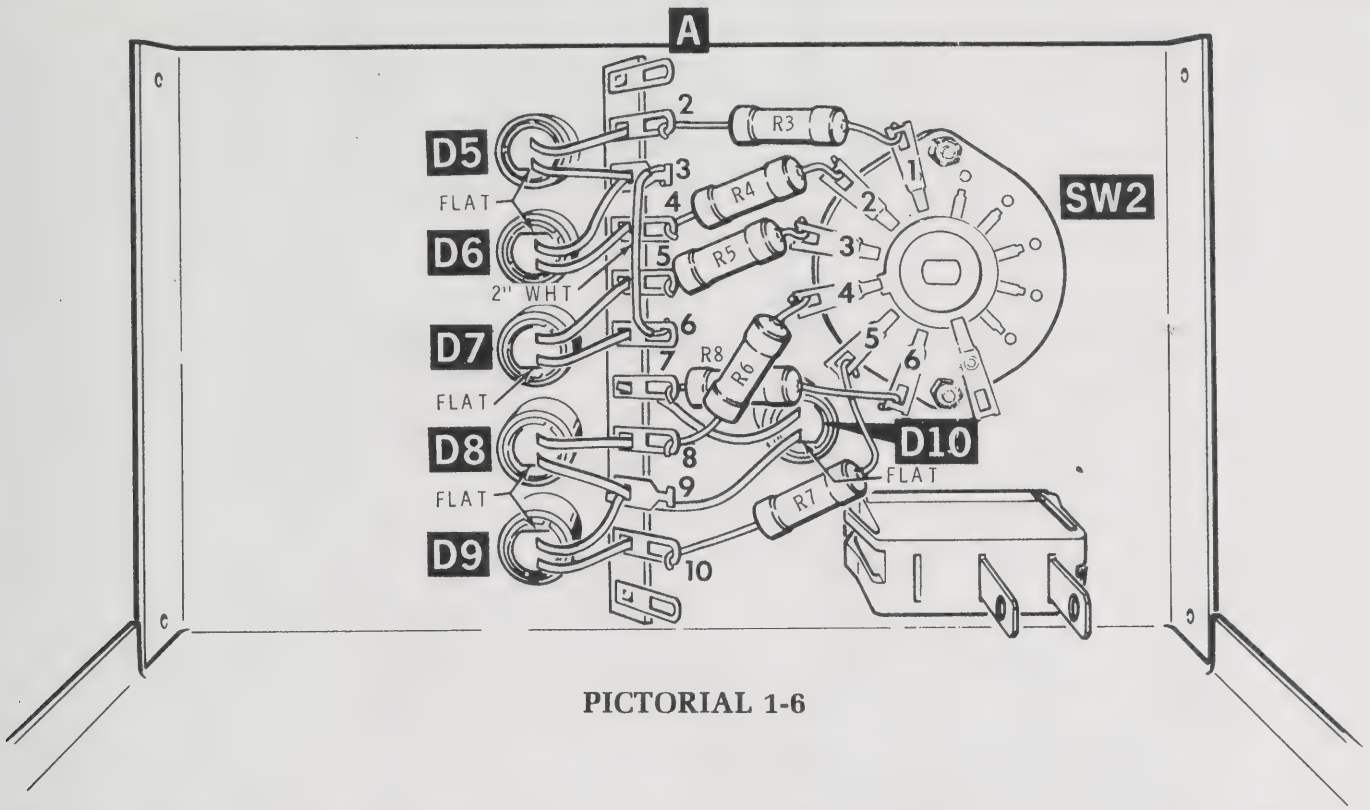
You will have to purchase an 8-wire cable that will connect the remote chassis to the control chassis. First determine the length of the cable that you will need. Allow enough extra for drip loops and routing. You can obtain this cable from Heath Company in 50′, 100′, and 150′ rolls. The model numbers are listed below.

50′	IDA-1290-1
100′	IDA-1290-2
150′	IDA-1290-3





PICTORIAL 1-5



PICTORIAL 1-6

Refer to Pictorial 1-6 for the following steps.

NOTE: All LED connections will be made to the lower holes in strip A in the following steps.

( ) Connect the lead on the flat side (bottom lead) of D10 to lug 9 (NS). Connect the other lead to lug 7 (NS).

( ) Connect the lead on the flat side (bottom lead) of D5 to lug 3 (NS). Connect the other lead to lug 2 (NS).

( ) Connect the lead on the flat side (top lead) of D6 to lug 3 (NS). Connect the other lead to lug 4 (NS).

( ) Connect the lead on the flat side (bottom lead) of D7 to lug 6 (NS). Connect the other lead to lug 5 (NS).

( ) Connect the lead on the flat (bottom lead) of D8 to lug 9 (NS). Connect the other lead ot lug 8 (NS).

( ) Connect the lead on the flat side (top lead) of D9 to lug 9 (S-3). Connect the other lead to lug 10 (NS).

Connect the six 2200 Ω (red-red-red) resistors between SW2 and terminal strip A in the following steps.

( ) R8: SW2 lug 6 (S-2) to terminal strip A lug 7 (S-2).

( ) R7: SW2 lug 5 (S-2) to terminal strip A lug 10 (S-2).

( ) R6: SW2 lug 4 (S-2) to terminal strip A lug 8 (S-2).

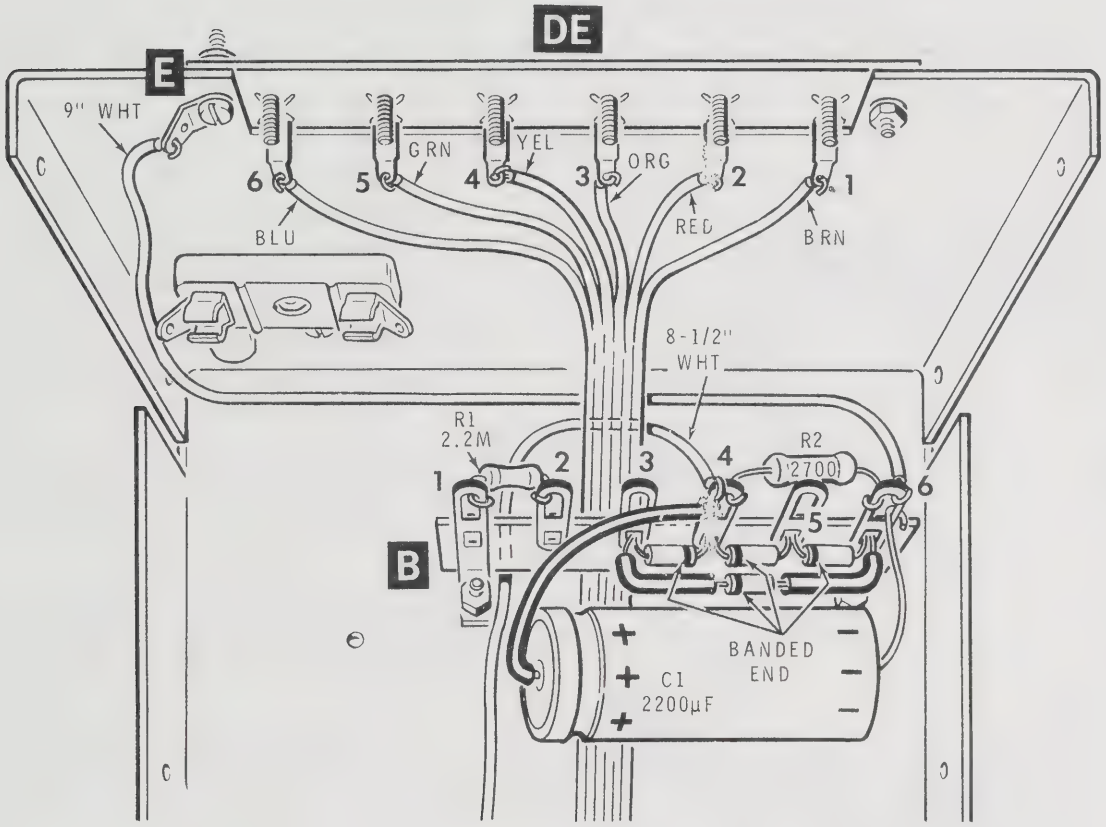
( ) R5: SW2 lug 3 (S-2) to terminal strip A lug 5 (S-2).

( ) R4: SW2 lug 2 (S-2) to terminal strip A lug 4 (S-2).

( ) R3: SW2 lug 1 (S-2) to terminal strip A lug 2 (S-2).

( ) Connect a 2-1/2" white wire from terminal strip A lug 3 (S-3) to lug 6 (S-2).

( ) Check to be sure that none of the resistor or LED leads short to adjacent connections.



PICTORIAL 1-7

Two sets of line voltage wiring instructions are given below, one for 120 VAC line voltage and the other for 240 VAC line voltage. In the U.S.A., 120 VAC is most often used, while in foreign countries 240 VAC is more common. USE ONLY THE INSTRUCTIONS THAT AGREE WITH THE LINE VOLTAGE IN YOUR AREA.

120 VAC WIRING

( ) T1: Refer to Detail 1-8C (Illustration Booklet, Page 4) and cut the leads of the power transformer to the lengths shown. Then remove 1/4" of insulation from the end of each lead. If the transformer leads are not presoldered, twist the strands together and melt a small amount of solder on the end of each lead.

( ) Refer again to Detail 1-8C and mount the transformer at T1 with 8-32 × 3/8" hardware. Position the leads as shown in the Pictorial.

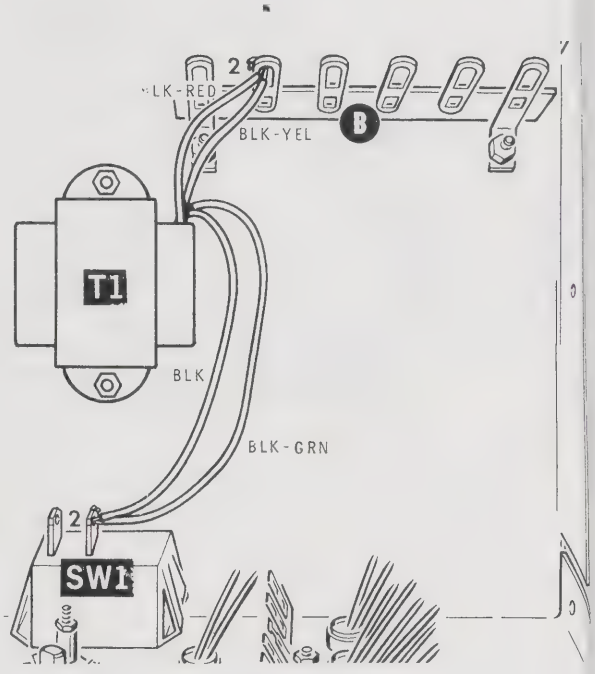
NOTE: When you connect the transformer leads and line cord leads in the following steps, make "mechanically secure" connections as shown in the inset drawing of Pictorial 1-8.

Refer to Detail 1-8D for the following steps.

( ) Connect the black-green lead to SW1 lug 2 (NS).

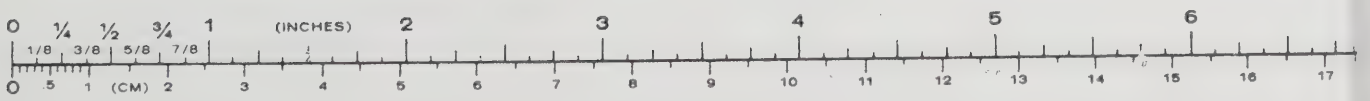
( ) Connect the black lead to SW1 lug 2 (S-2).

( ) Connect the black-yellow lead to terminal strip B lug 2 (NS).



Detail 1-8D

( ) Connect the black-red lead to terminal strip lug 2 (NS).



240 VAC WIRING

NOTE: For 220/240 volt operation, you must change the plug on the line cord to the appropriate type specified by your local electrical code.

( ) T1: Refer to Detail 1-8C and cut the leads of the power transformer to the lengths shown. Then remove 1/4" of insulation from the end of each lead. Melt a small amount of solder on the end of each lead, if not already done.

( ) Refer again to Detail 1-8C and mount the power transformer at T1 with 8-32 × 3/8" hardware. Position the leads as shown in the Pictorial.

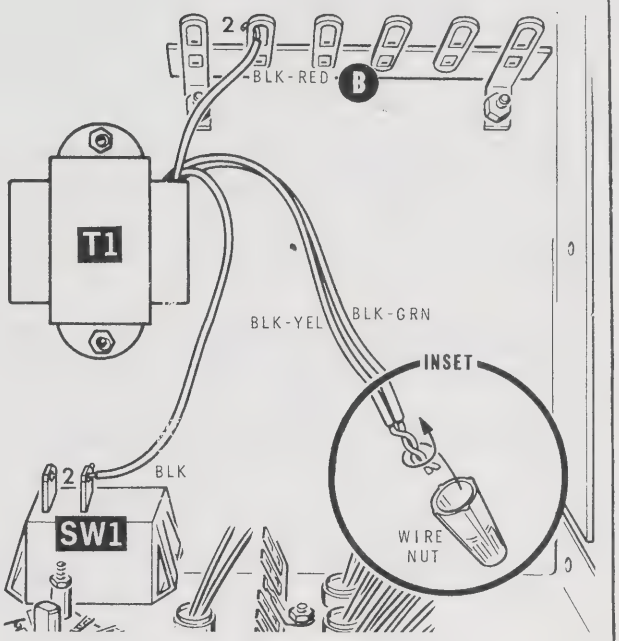
NOTE: When you connect the transformer leads and line cord leads in the following steps, make "mechanically secure" connections as shown in the inset drawing of Pictorial 1-8.

Refer to Detail 1-8E for the following steps.

( ) Connect the black lead to SW1 lug 2 (S-1).

( ) Twist the ends of the black-yellow and black-green leads together in a clockwise direction. Then turn a wire nut on the twisted leads, also in a clockwise direction.

( ) Connect the black-red lead to terminal Strip B lug 2 (NS).



Detail 1-8E

( ) Connect the smooth (short) line cord lead to fuse block lug 1 (S-1). Make a mechanically secure connection.

( ) Connect the ribbed line cord lead to terminal strip B lug 2 (S-4). NOTE: (S-3) for 240 VAC. Make a mechanically secure connection.

( ) Connect the 6-1/4" red transformer lead to terminal strip B lug 5 (S-1).

( ) Connect the 5-3/4" red transformer lead to terminal strip B lug 3 (S-1).

( ) Connect one end of the 6" smooth lead cut from the line cord to fuse block lug 2 (S-1). Connect the other end of the lead to SW1 lug 1 (S-1).

INITIAL TESTS

Refer to Pictorial 1-11 (Illustration Booklet, Page 5) for the following steps.

NOTE: You will need a high-impedance voltohmmeter to perform the following tests. If you do not get the proper indication in any of the following steps, make sure the line cord is unplugged, then refer to "In Case of Difficulty."

( ) Make sure the line cord is unplugged; then measure the resistance from terminal strip B lug 4 to lug 6. The reading should be about 2700 Ω.

( ) Disconnect the meter leads.

( ) Plug the line cord into an AC outlet.

( ) Rotate SW2 fully counterclockwise as viewed from the front of the control chassis.

( ) Place the POWER switch in the ON position. The (1) green LED should light.

( ) Place the POWER switch to OFF.

( ) Set your voltmeter to measure volts DC. Connect the voltmeter positive (+) lead to terminal strip B lug 4. Connect the voltmeter negative (−) lead to terminal strip B lug 6.

( ) Place the POWER switch to ON; the meter reading should be 30 VDC. Then place the POWER switch of OFF, and disconnect the meter leads.

( ) Place the POWER switch to ON.

( ) Rotate SW2 one position clockwise and check to see that the (2) green LED lights.

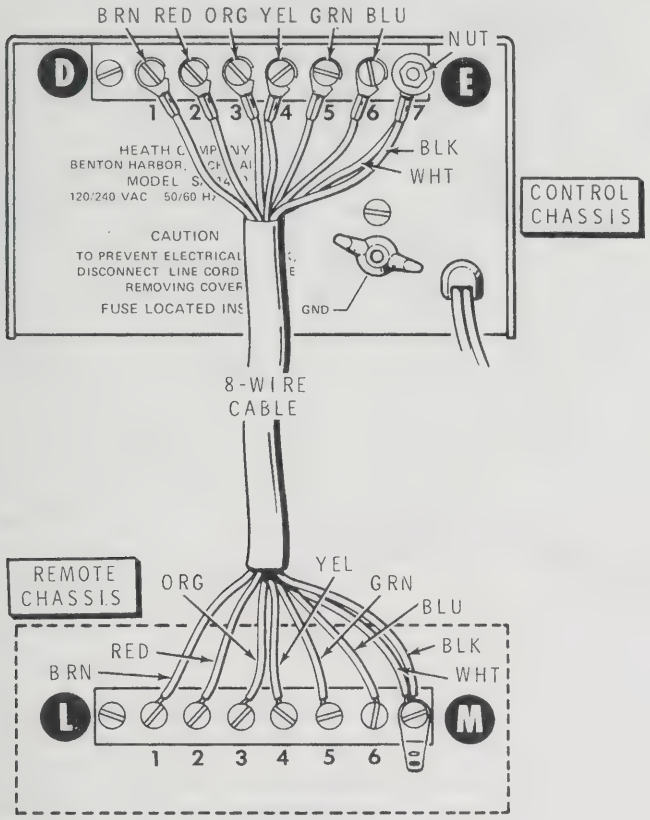
( ) Repeat the above step for LED's (3), (4), and (5).

( ) Rotate SW2 to its fully clockwise position and check to see that the (GND) red LED lights.

( ) Place the POWER switch in the OFF position.

( ) Unplug the line cord.

This completes the Initial Tests. Proceed to "Control Final Assembly."



PICTORIAL 2-7

Refer to Pictorial 2-7 for the following steps.

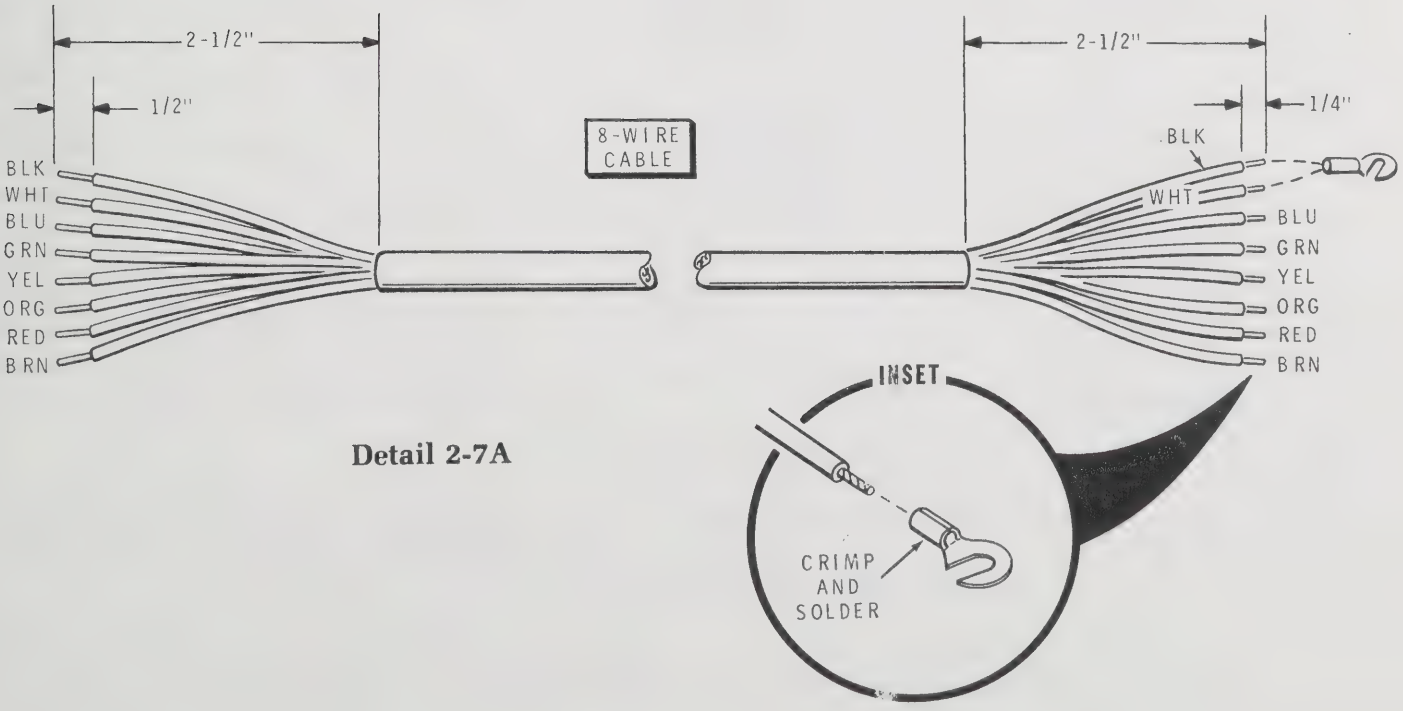
NOTE: Before you perform the following steps, you must determine the location for the control unit and where you will mount the remote. Refer to "Installation" on Page 34 and read the information under "Mounting" and "Cable Routing."

( ) Determine the length of 8-wire cable you will need to connect the control chassis to the remote chassis. Make sure you allow enough cable to form a drip loop. Then refer to Detail 2-7A and prepare the ends of the 8-wire cable as shown.

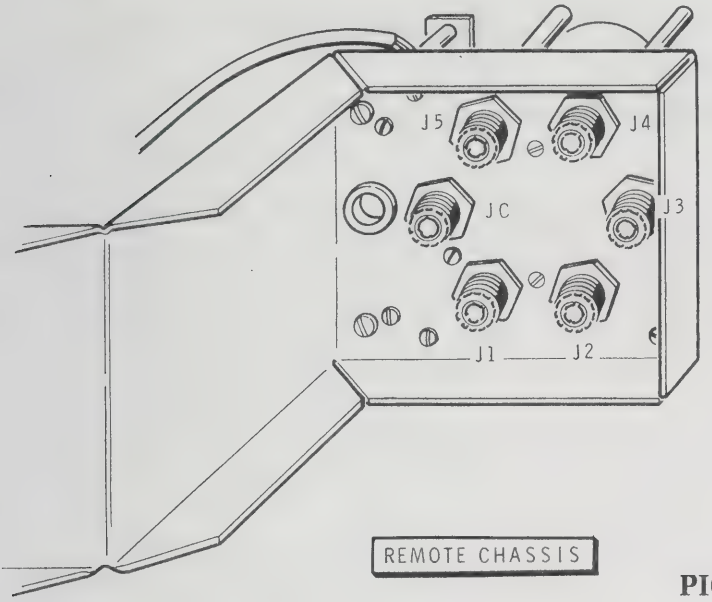
( ) Crimp and solder six #8 spade lugs on the brown, red, orange, yellow, green, and blue wires at the indicated cable end as shown in the inset drawing of Detail 2-7A.

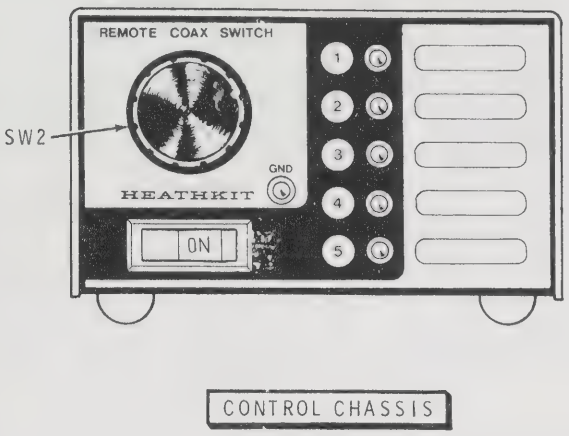
( ) At this same end of the cable, twist the ends of the black and white wires together. Then crimp and solder a #8 spade lug on these two wires as shown in the Detail.

( ) Connect the 8-wire cable end with spade lugs to terminal strip DE on the rear of the control chassis. Refer to the wire colors called out on the Pictorial for the proper connections.



Detail 2-7A





PICTORIAL 2-8

( ) Position the remote chassis as shown in the Pictorial. Then connect the other end of the 8-wire cable to the remote chassis terminal strip LM. Refer to the wire colors called out in the Pictorial for the proper connections.

Operational Test

Refer to Pictorial 2-8 for the following steps.

( ) Position the remote chassis and the control chassis as shown in the Pictorial.

( ) Plug the line cord into an AC outlet.

( ) Rotate SW2 fully clockwise.

( ) Place the POWER switch in the ON position.

( ) Check to see that the (GND) red LED lights. NOTE: If the motor turns, there is either an 8-wire cable wiring error or a motor flat cable wiring error. Refer back to the appropriate wiring instructions and correct any wiring errors before you proceed.

( ) Connect one lead of your ohmmeter to the metal chassis of the remote. Touch the other lead to the center conductor of coax jacks J1 through J5 and measure the resistance from the center conductor to chassis ground. The reading should be zero ohms in each case.

( ) Measure the resistance from the center conductor of JC to chassis ground. The reading should be infinity.

( ) Rotate SW2 one position counterclockwise. The motor should turn, and when it stops, the (5) green LED should light.

( ) Measure the resistance from the center conductor of J5 to the center conductor of JC. The reading should be zero ohms.

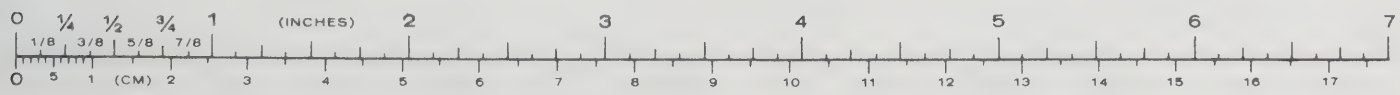
( ) Rotate SW2 counterclockwise to each of the remaining positions each time measure the resistance between the center conductor of jack JC and the center conductor of the appropriate coax jack. In each case, the resistance should be zero ohms. Also, the motor should turn and the appropriate LED should light when the motor stops.

( ) Place the POWER switch in the OFF position.

( ) Unplug the line cord.

( ) Disconnect the 8-wire cable at the remote end.

This completes the Operational Test.



REMOTE FINAL ASSEMBLY

Refer to Pictorial 2-9 (Illustration Booklet, Page 8) for the following steps.

WARNING: In the next step, you will open the capsule of locking compound. Treat this substance with care because it contains 1,1,1-TRICHLOROETHANE. If it is swallowed, induce vomiting and call a physician. Avoid contact with skin and eyes. Use with adequate ventilation. In case of eye contact, flush thoroughly with water.

( ) Use a sharp knife or scissors to clip off the nipple on one of the locking compound capsules.

( ) Apply a small dab of locking compound on the screw heads and nuts at each of the 14 indicated points as shown in the Pictorial.

( ) Apply a small dab of locking compound on the screw heads and nuts at each of the seven points as shown in Pictorial 2-10 (Illustration Booklet, Page 9).

( ) Allow thirty minutes for the locking compound to dry.

NOTE: Dispose of the remaining locking compound in a safe place.

This completes the assembly of your Heathkit Remote Coax Switch. Carefully inspect all connections for loose wires or unsoldered connections. Remove any wire clippings or solder splashes. Then proceed to the Installation section.

INSTALLATION

This section of the Manual gives you general information for mounting and connecting the remote assembly. Your installation will vary to suit your particular requirements.

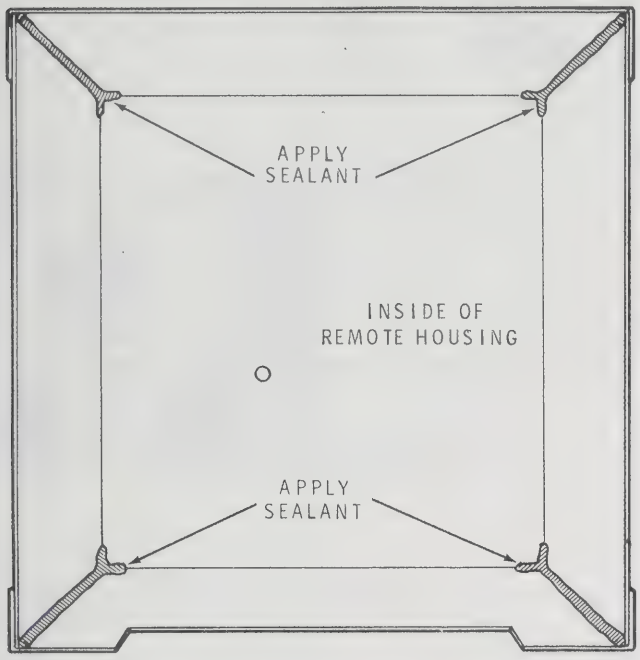
MOUNTING

The remote assembly should be mounted on an existing tower or mast. The mounting hardware furnished will accept a tubular mast up to 1-1/2" diameter. We recommend that you do not mount the remote assembly on a chimney mast because of corrosive fumes from the chimney. Refer to Pictorial 3-1 (Illustration Booklet, Page 10) for some suggested mounting methods. Detail 3-1A shows the correct way to install the U-bolt, plates, and nuts.

CABLE ROUTING

How you route the cable is a matter for each individual installation. We recommend you use plastic tape (not supplied) to secure the cables to a tower leg or mast. You can use staples or TV lead-in standoffs to secure the cable to wood.

You may be able to bring the cable into the building in the same manner as your existing antenna feedline. To keep out moisture, you should plug the entry hole with a good grade of caulking compound which will remain pliable and will not harden. Be sure to form a drip loop in the cable as shown in Pictorial 3-1.



PICTORIAL 3-3

( ) Refer to Pictorial 3-3, position the remote housing as shown, and seal the seams of the housing. Use the tube of sealant to form a bead at each corner.

( ) Refer to Pictorial 3-4 (Illustration Booklet, Page 11) and install the housing on the remote chassis with a 6-32 × 1/4" housing screw and rubber washer.

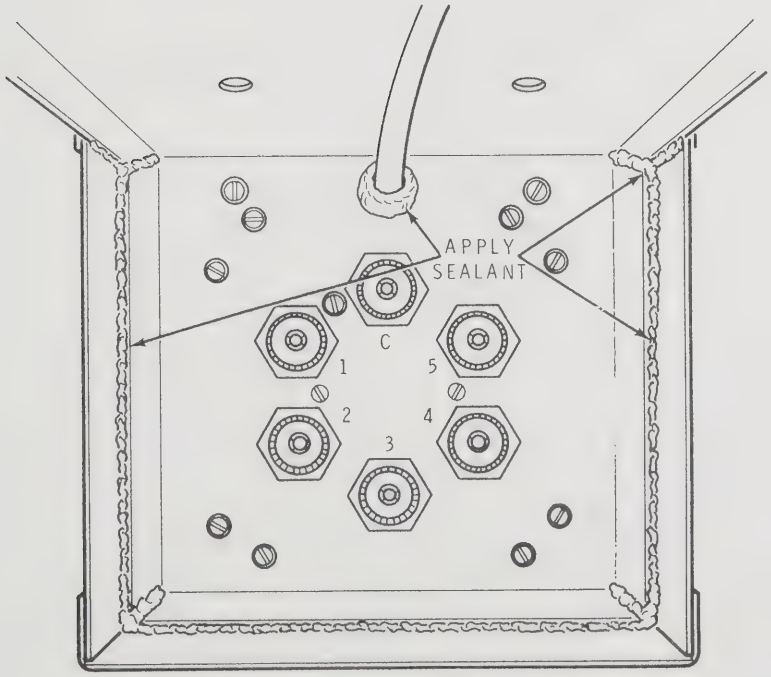
( ) Refer to Pictorial 3-4 and thoroughly seal the housing screw and washer (as shown on the inset drawing). Also seal the housing cover bottom edge.

( ) Refer to Pictorial 3-5 and seal the bottom of the housing and the cable where it passes through the plastic grommet.

( ) Connect your station feedline to coax jack JC.

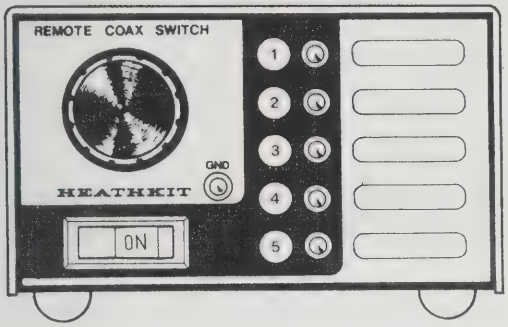
( ) Connect your antennas to coax jacks J1-J5 and note which antenna is connected to each jack.

( ) Install protective caps on any unused coax jacks.



PICTORIAL 3-5

OPERATION



LABEL SET

PICTORIAL 4-1

Refer to Pictorial 4-1 as you read the following information.

The switch positions are numbered on the front of the control chassis, and a space is provided at the right of each position so you can write in a designation if you choose.

Also, a separate label set is included so that if you wish, you can place any of the numbers or symbols from the label set over the numbers on the control chassis.

To operate the Remote Coax Switch, simply press the POWER switch to the ON position. Rotate the knob to select the desired antenna. The green LED's will indicate which antenna is connected to the feedline. When the red LED is lit, all antennas are grounded and the feedline is open-circuited.

You can turn the POWER switch OFF when you are not selecting an antenna, since no power is required once a selection is made. It is normal for the LED's to remain lit for a few seconds after the power is turned off.

IN CASE OF DIFFICULTY

Begin your search for any trouble that occurs after assembly by carefully following the steps listed below in the "Visual Tests." After you complete the "Visual Tests," refer to the Troubleshooting Chart.

VISUAL TESTS

1. Recheck the wiring. Trace each lead with a colored pencil on the Pictorial as you check it. It is frequently helpful to have a friend check your work. Someone who is not familiar with the unit may notice something that you have consistently overlooked.

2. About 90% of the kits that are returned to the Heath Company for repair do not function properly due to poor connections and soldering. Therefore, you can eliminate many troubles by reheating all connections to make sure they are soldered as described on Pages 5 and 18 of the Manual.

3. Check to be sure all diodes are in their proper locations. Make sure each lead is connected to the proper point. Make sure that each diode band or flat is positioned correctly.

4. Check electrolytic capacitors to be sure their positive (+) mark is at the correct position.

5. Check the values of the parts. Be sure in each step that you wired the correct part into the circuit, as shown in the Pictorial.

6. Check for bits of solder, wire ends, or other foreign matter which may be lodged in the wiring.

7. Look between each terminal lug and the chassis to be sure all leads were cut off short.

8. A review of the "Circuit Description" may also help you determine where the trouble is.

If you still have not located the trouble after the "Visual Tests" are completed, and a voltmeter is available, check voltage readings against those shown on the Schematic Diagram. Read the "Precautions for Bench Testing" before you make any measurements. NOTE: All voltage readings were taken with a high impedance voltmeter. Voltages may vary as much as ±20%.

NOTE: In an extreme case where you are unable to resolve a difficulty, refer to the "Customer Service" information inside the rear cover of this Manual. Your Warranty is located inside the front cover.

PRECAUTIONS FOR BENCH TESTING

NOTE: Use a high input impedance voltmeter for voltage measurements.

1. Be sure you do not short circuit any terminals when you make voltage measurements. If the probe slips, for example, and shorts out a voltage supply point, it is almost certain to damage one or more components.
2. Do not remove any components while the kit is operating; this could cause considerable damage.

If you repair your Remote Coax Switch, make sure you eliminate the cause as well as the effect of the trouble. If, for example, you find a damaged resistor, be sure to find out what caused the resistor to become damaged. If the cause is not eliminated, the replacement resistor may also become damaged when the unit is put back into operation.

Troubleshooting Chart

The following chart lists conditions and possible causes of several specific malfunctions. If a part is mentioned, check that part to be sure it is installed and/or wired correctly. It is possible on rare occasions, for a part to be faulty and require replacement.

Problem	Possible Cause
Completely inoperative.	1. Fuse blown. 2. Power supply circuitry.
LED doesn't light in one position.	1. LED installed backwards.
LED lights, motor doesn't turn.	1. Open or miswired cable.
All LED's light dimly.	1. Motor stalled.

SPECIFICATIONS

Loss at 100 MHz	Less than .2 dB.
VSWR	Under 30 MHz — 1.05:1 or less. Under 150 MHz — 1.20:1 or less.
Impedance	50-70 ohms.
Power Handling Capability	2000 watts PEP.
Temperature Range	−40° F to +177° F (−40° C to + 80° C).
Number of Ports	5.
Power Requirements	120/240 VAC, 50/60 Hz.

The Heath Company reserves the right to discontinue products and to change specifications at any time without incurring any obligation to incorporate new features in products previously sold.

CIRCUIT DESCRIPTION

Refer to the Schematic and the Block Diagram while you read the following general description.

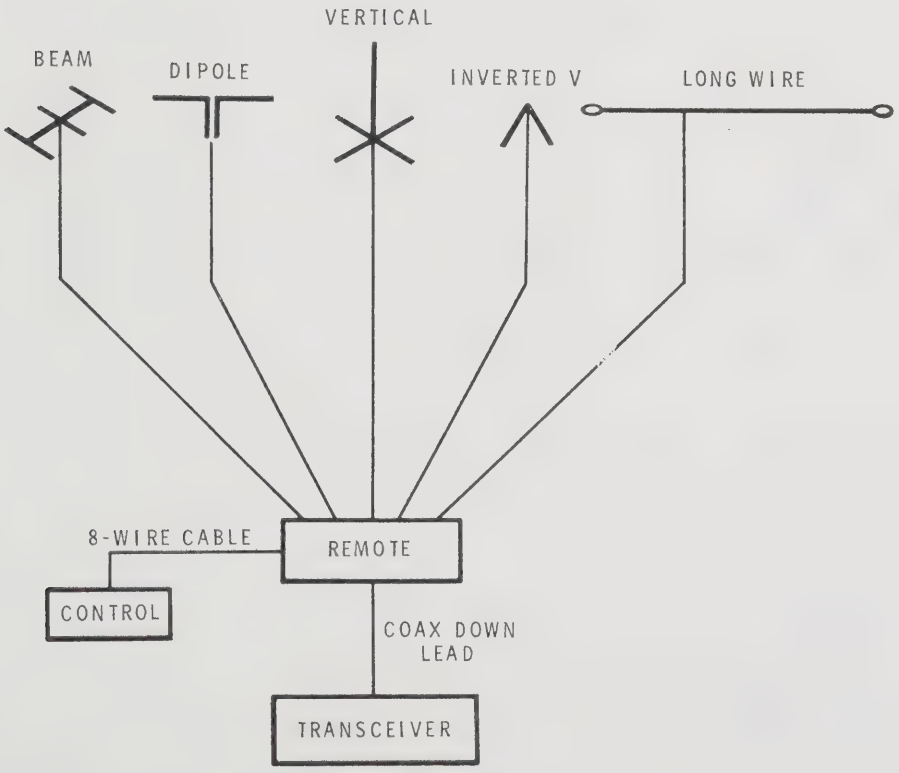
The 120 VAC or 240 VAC line voltage is applied to transformer T1 through fuse F1 and power switch SW1. Resistor R1 provides a discharge path to protect T1 from a build up of static electricity.

T1 steps down the line voltage and feeds it to the bridge rectifier consisting of D1, D2, D3, and D4. Capacitor C1 filters the AC ripple content and resistor R2 forms a bleeder when power is removed.

The +30 VDC source is supplied to SW2, which routes it through one of six positions, to the 8-wire cable, and to the motor switch, SW3.

SW3 and the pulse switch cause the motor to step in 30-degree increments until an open circuit is found. When the motor stops, the appropriate antenna (or ground) is selected through SW4 and the corresponding LED lights.

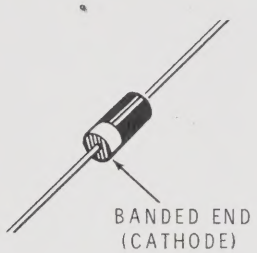
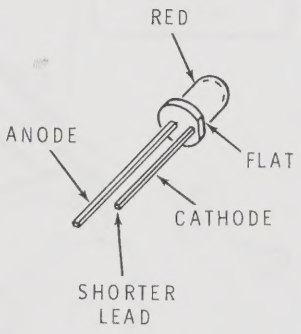
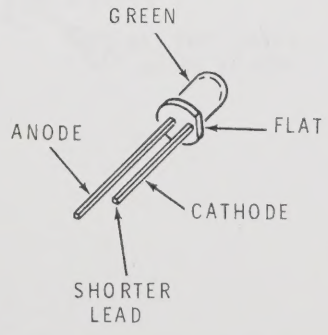
Diode D11 shunts the counter EMF across the motor and C2 suppresses any noise generated due to the pulse switching.

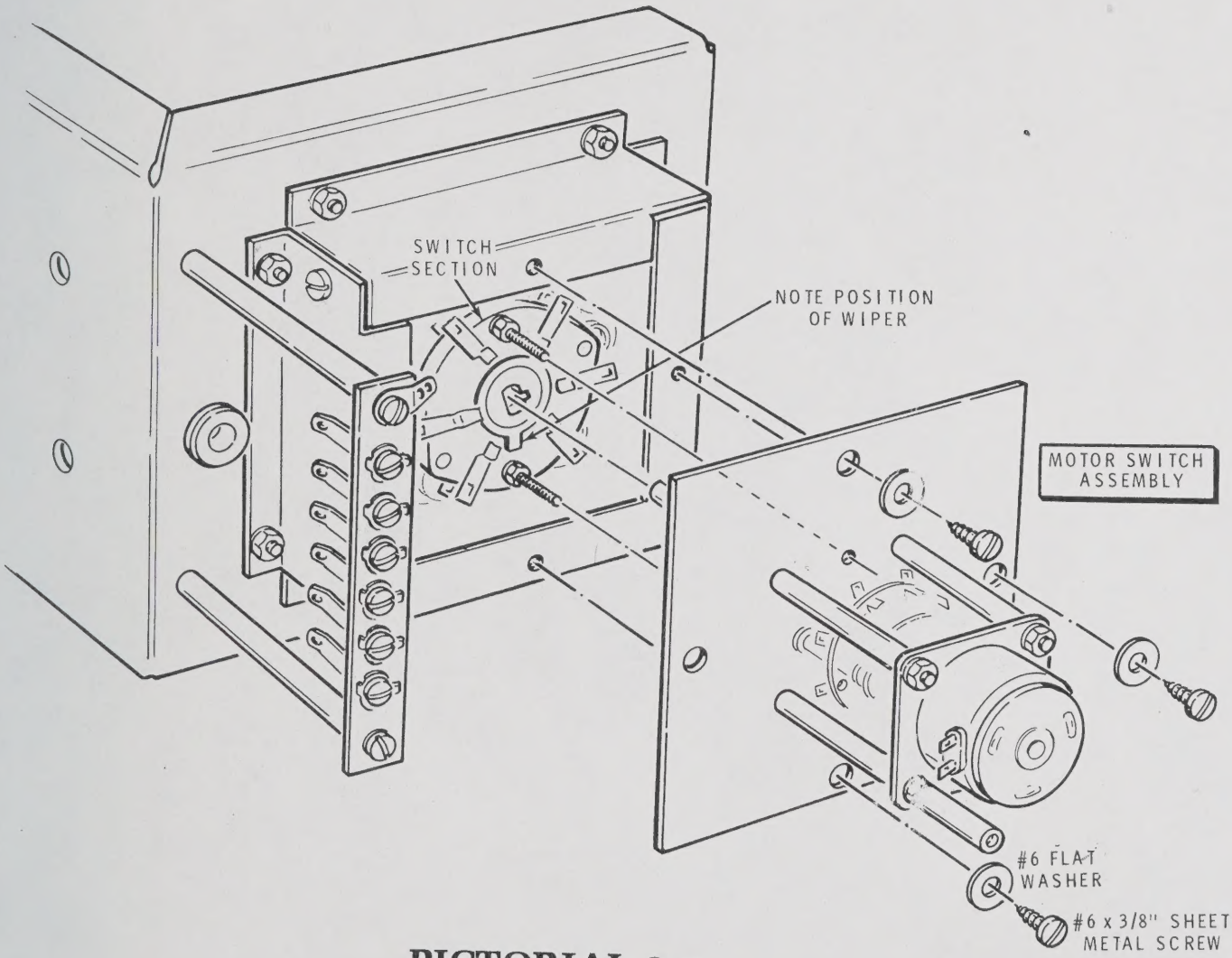


Block Diagram

SEMICONDUCTOR IDENTIFICATION CHARTS

DIODES

HEATH PART NUMBER	MAY BE REPLACED WITH	CIRCUIT COMPONENT NUMBER	IDENTIFICATION
57-27	1N2071	D1, D2, D3, D4, D11	
412-611		D10	
412-628	FLV360	D5, D6, D7, D8, D9	



PICTORIAL 2-5